STEREO POWER AMPLIFIER

KAC-721

SERVICE MANUAL

KENWOOD

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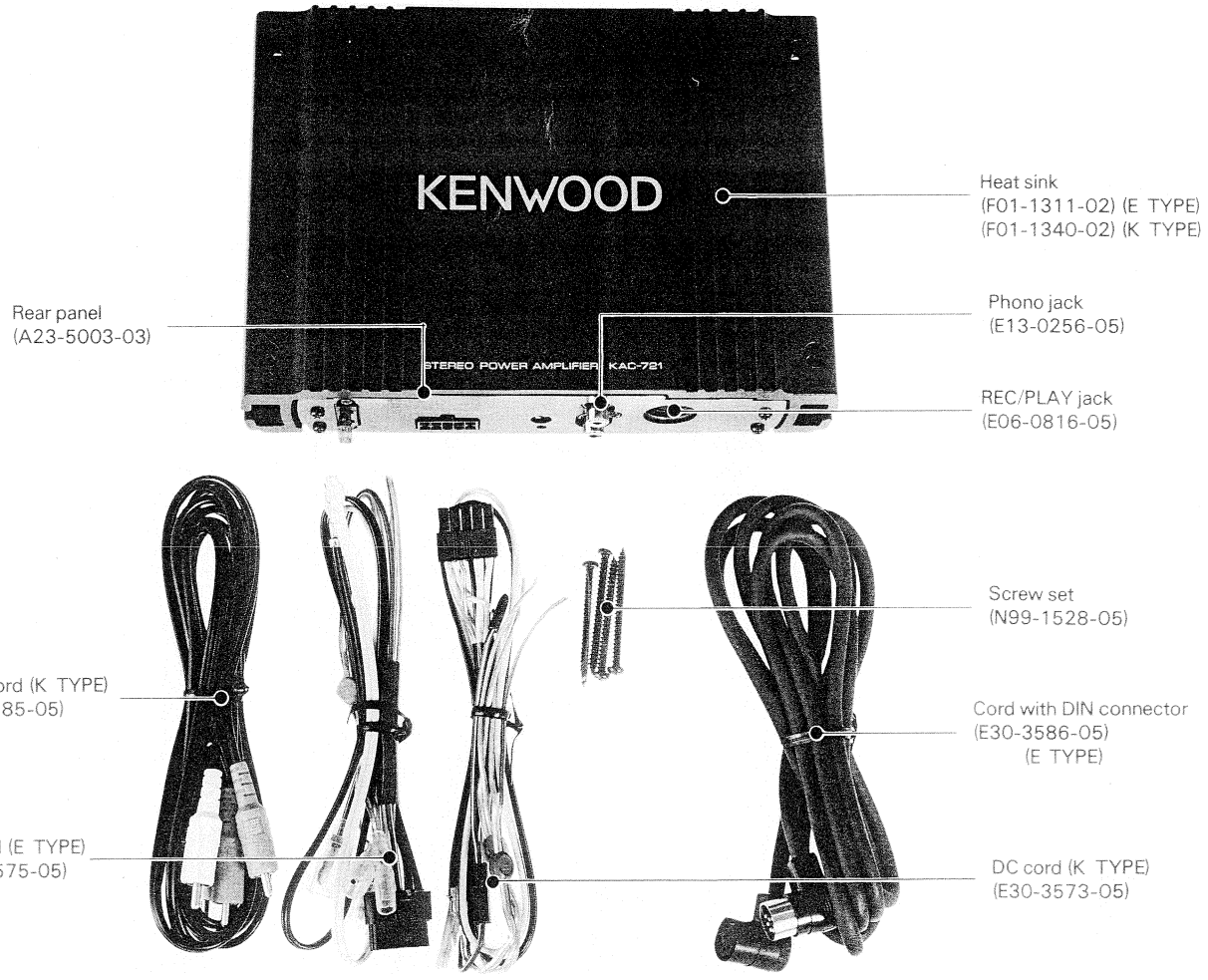
B51-6078-00(B)2984



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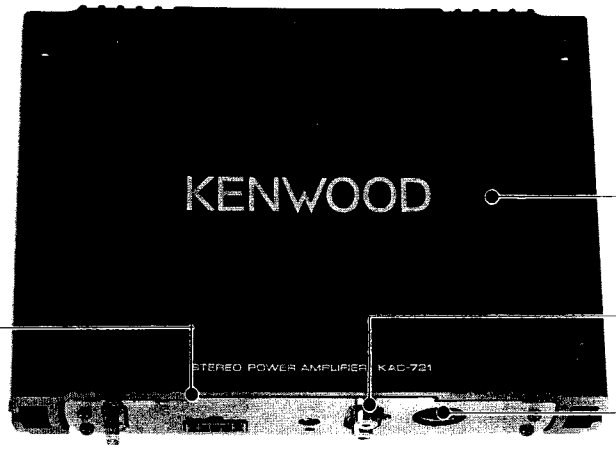
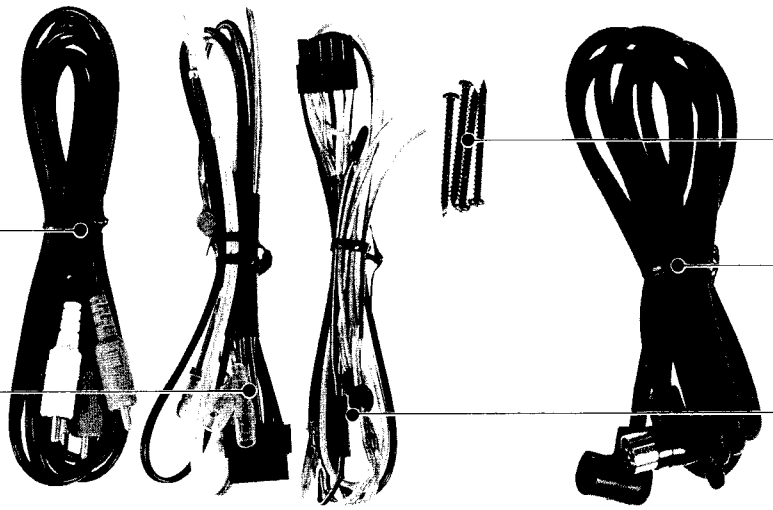


Heat sink
(F01-1311-02) (E TYPE)
(F01-1340-02) (K TYPE)

Rear panel
(A23-5003-03)

Phono jack
(E13-0256-05)

REC/PLAY jack
(E06-0816-05)



Screw set
(N99-1528-05)

Audio cord (K TYPE)
(E30-3585-05)

Cord with DIN connector
(E30-3586-05)
(E TYPE)

DC cord (E TYPE)
(E30-3575-05)

DC cord (K TYPE)
(E30-3573-05)

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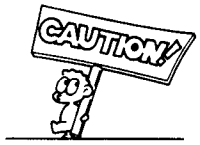
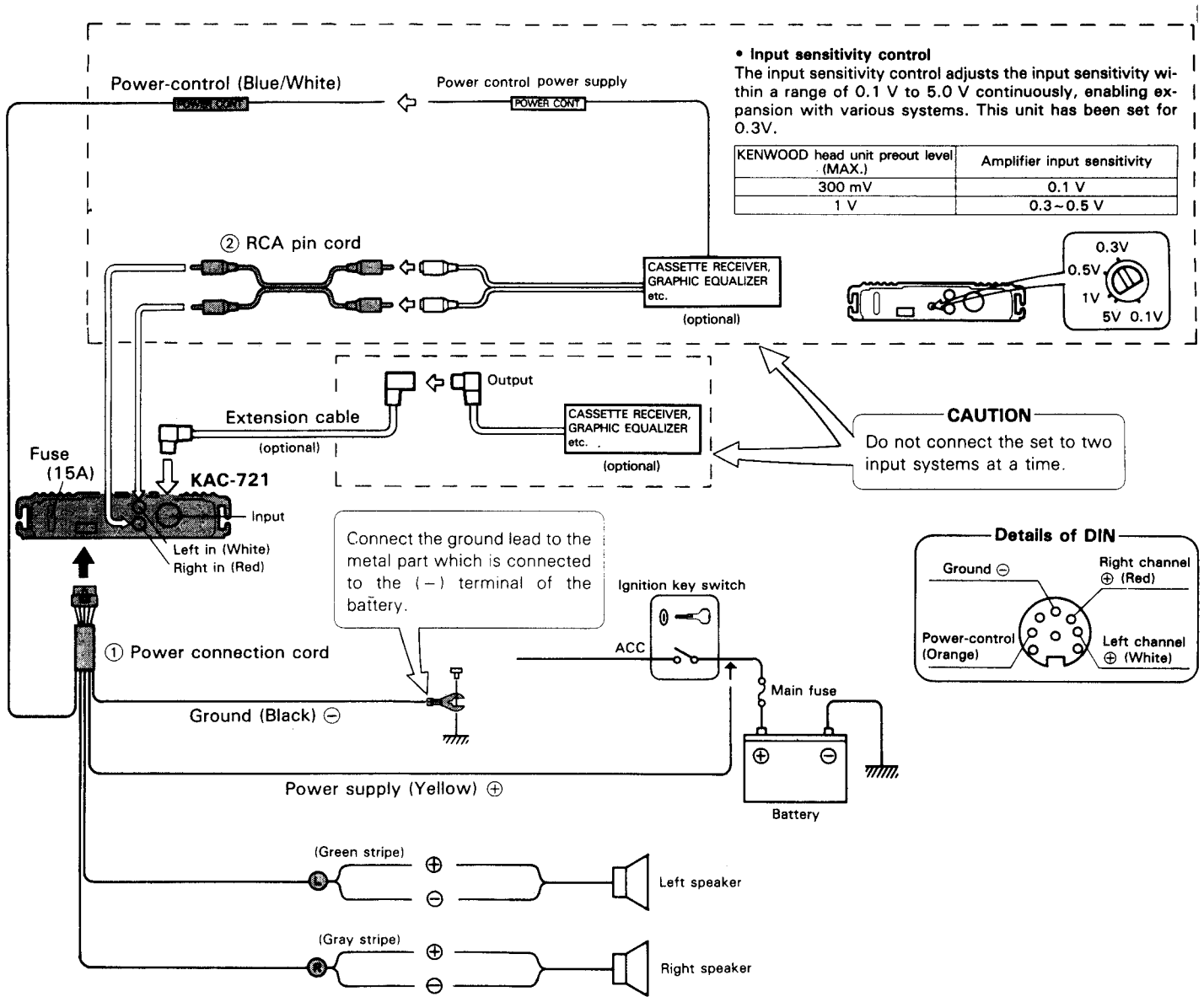
■ INSTALL MANNER

1. Before installation and wiring, remove the (−) terminal of the battery to prevent short-circuiting.
2. Connect the input and output cords of the system.
3. Connect the ground to the metal chassis of the car.
4. Connect the back-up power supply lead (yellow).
5. Install the set and after confirming the installation and wirings are correct, connect the (−) terminal of the battery.

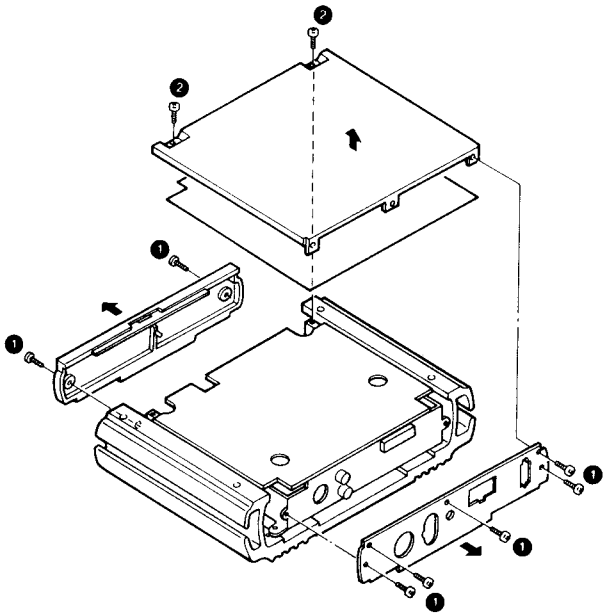


- If a fuse is blown, first check that the associated wires are not short-circuited then replace the fuse with a new one having the same capacity.

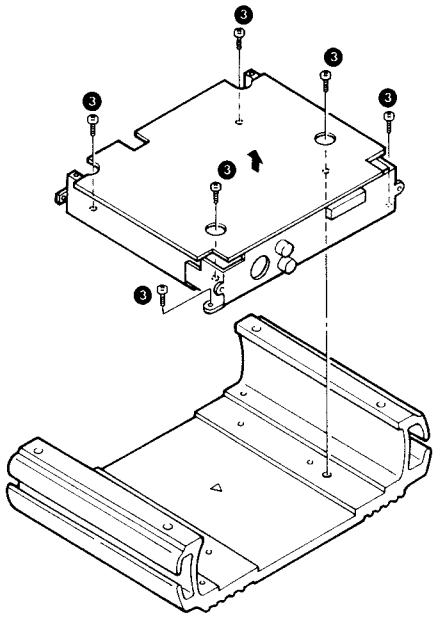


DISASSEMBLY FOR REPAIR

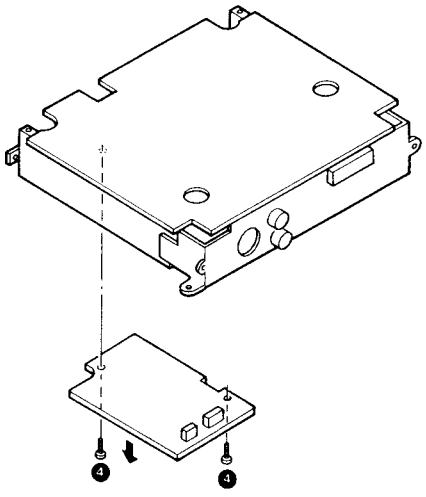
1. Remove the seven screws ❶ of the front and rear panels and detach them.
2. Remove the two screws ❷ of the bottom plate and detach it.



3. Remove the six screws ❸ and disconnect the PC board.



4. Remove the two screws ❹ and disconnect the PC board.



CIRCUIT DESCRIPTION

Component Functions

Description	Use/Function	Operation/Condition/Interchangeability
Q1, 2	Mute	At the rise of P-CON, mute turns ON due to Q13, while at the fall of P-CON, mute turns ON due to Q25. Moreover, with the input ground voltage positive-going, mute turns ON by way of D7 and D6.
Q3, 4	IC mute	At the rise of P-CON, mute turns ON due to a differentiation wave for a time constant determined by C44 and R64 (measure against ON shock noise.).
Q5, 6	Temperature compensation	
Q7, 8, 9, 10	Amplifier section power	
Q11, 12	Overcurrent detection	Detecting a current flowing in Q7—Q10, turn ON when an overcurrent flows.
Q13	Mute driver	At the rise of P-CON, turns ON for a time constant determined by C43 externally connected.
Q14	Overcurrent protection	When Q11 and Q12 turn ON by overcurrent detection, Q14 turns ON to pass the overcurrent to IC5.
Q15	Class—A +B control	Switch to turn ON/OFF the positive power of the class—A section in IC3/IC4. Controlled by IC5.
Q16, 17	DC/DC driver	
Q18, 19	DC/DC power	
Q20	P-CON voltage detector	Turns ON/OFF on the threshold voltage determined by D18 and its accompanying resistor to drive Q21.
Q21	Backup control	Turns ON by Q20 to supply power to IC5/IC6.
IC1	Isolation amplifier	GND isolation
IC3, 4	Main amplifier IC	ICs comprising class—A stage and driver circuit (Used in KAC-7020)
IC5	Protection	• Overcurrent protection • Thermal protection, etc.
IC6	OSC	Determines the oscillation frequency for DC/DC and serves as predriver IC.

ADJUSTMENT/REGLAGE/ABGLEICH

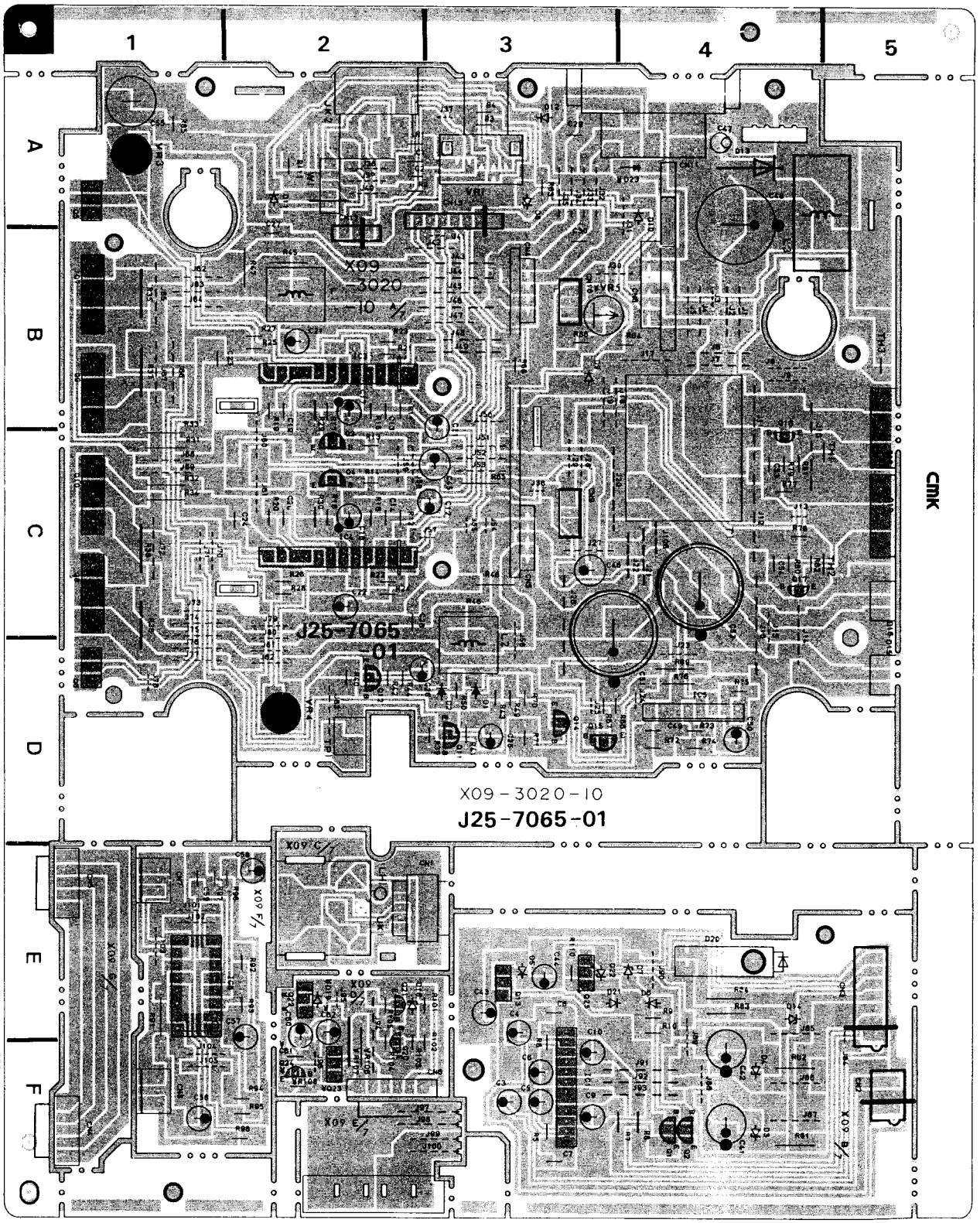
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
	Connect a cassette deck.						
1	IDLE CURRENT	–	Connect a DC voltmeter to: TP1 (L, R)	VOLUME: 0	VR3 (L) VR4 (R)	7.7 mV	(a)

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINT L'ALIGNEMENT	ALIGNER POUR	FIG.
	Raccorder une platine à cassette.						
1	COURANT DE POLARISATION	–	Raccorder un voltmètre CC à: TP1 (G, D)	VOLUME: 0	VR3 (G) VR4 (D)	7,7 mV	(a)

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	VERSTÄRKER EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
	Ein Kassettendeck anschließen.						
1	LEERLAUFSTROM	–	Einen Gleichstrom-Voltmeter anschließen an: TP1 (L, R)	VOLUME: 0	VR3 (L) VR4 (R)	7,7 mV	(a)

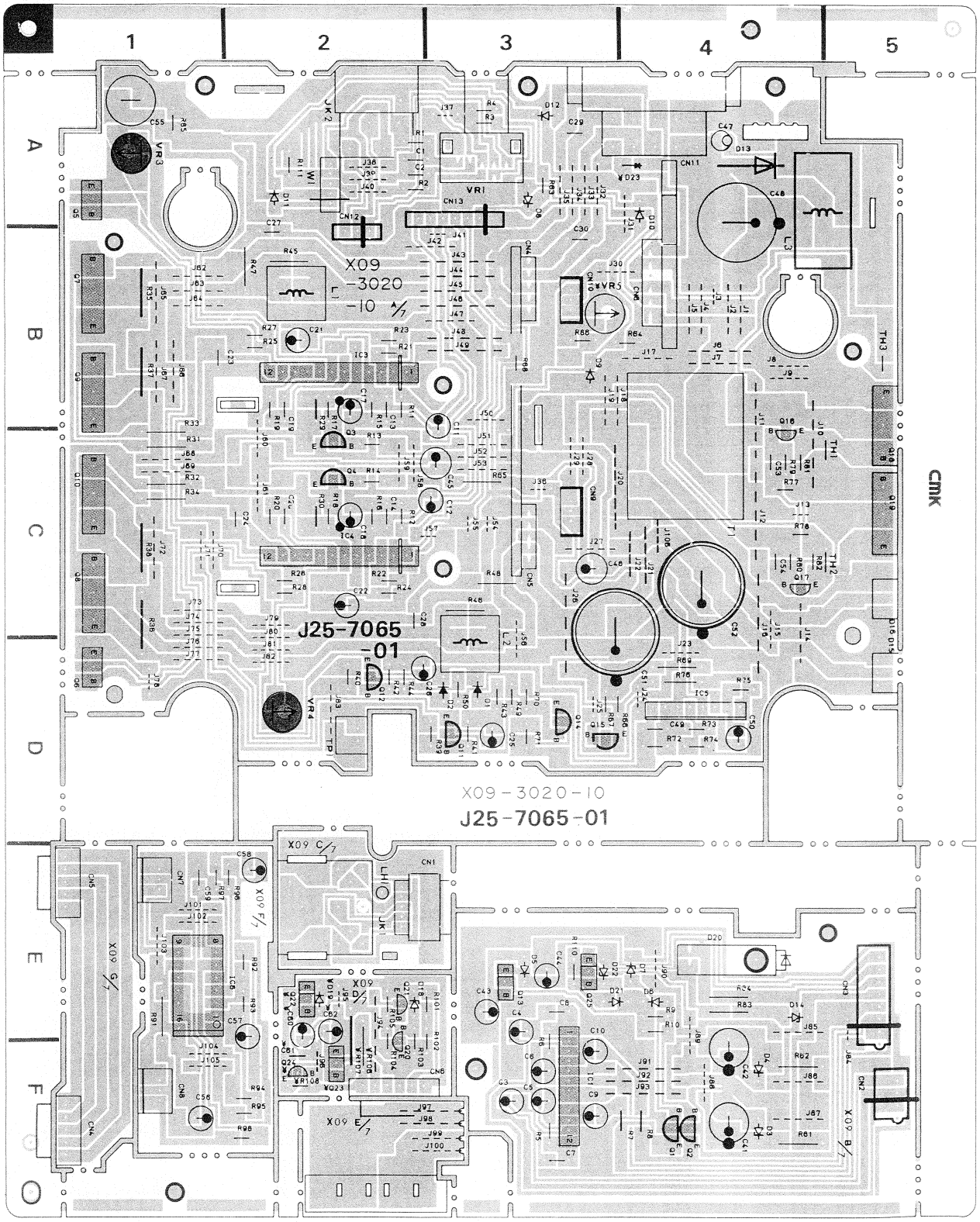
(a) → page 6

PC BOARD (Component Side View)



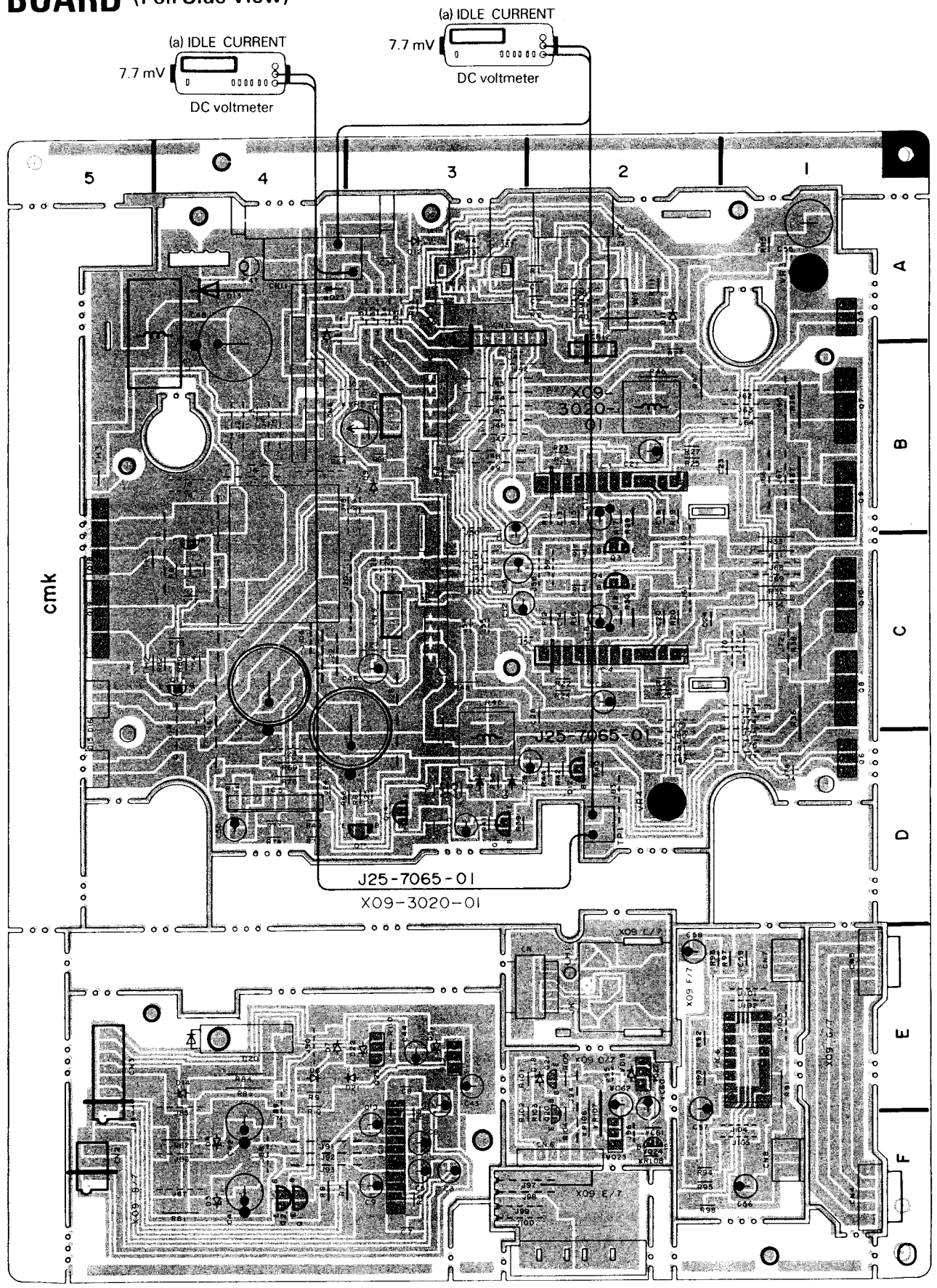
Ref.	IC																					1	3	4	5	6
No.	Q	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	25					
Address		6D	6D	3B	3B	2A	4A	2A	4A	3A	3A	4C	4B	6C	4C	4D	3D	4D	3E	3E	6C	6C	5C	6C	3B	4B	4D	6B

PC BOARD (Component Side View)



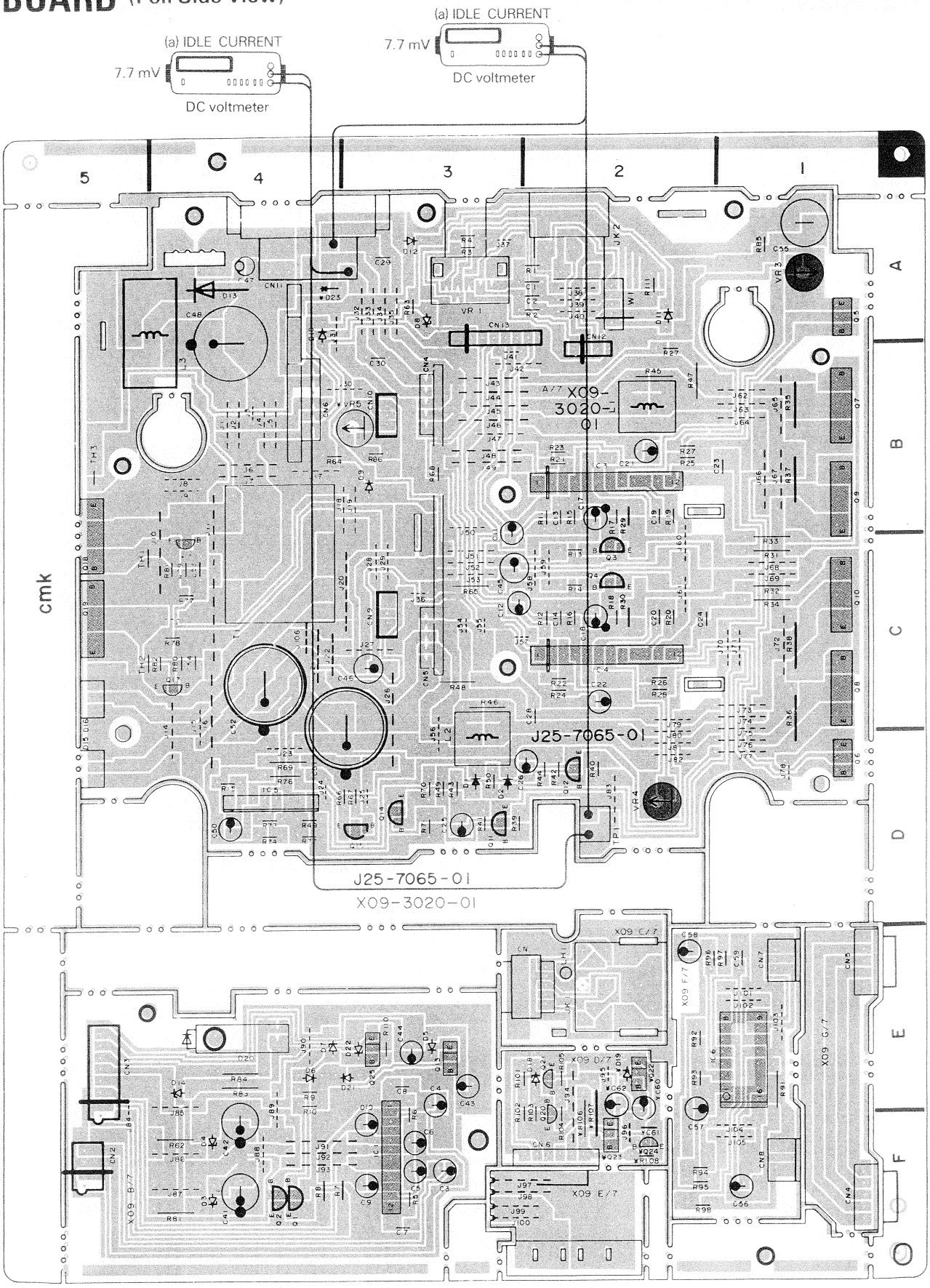
Ref. No.	IC / Q	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	25	1	3	4	5	6
Address		6D	6D	3B	3B	2A	4A	2A	4A	3A	3A	4C	4B	6C	4C	4D	3D	4D	3E	3E	6C	6C	5C	6C	3B	4B	4D	6B

PC BOARD (Foil Side View)

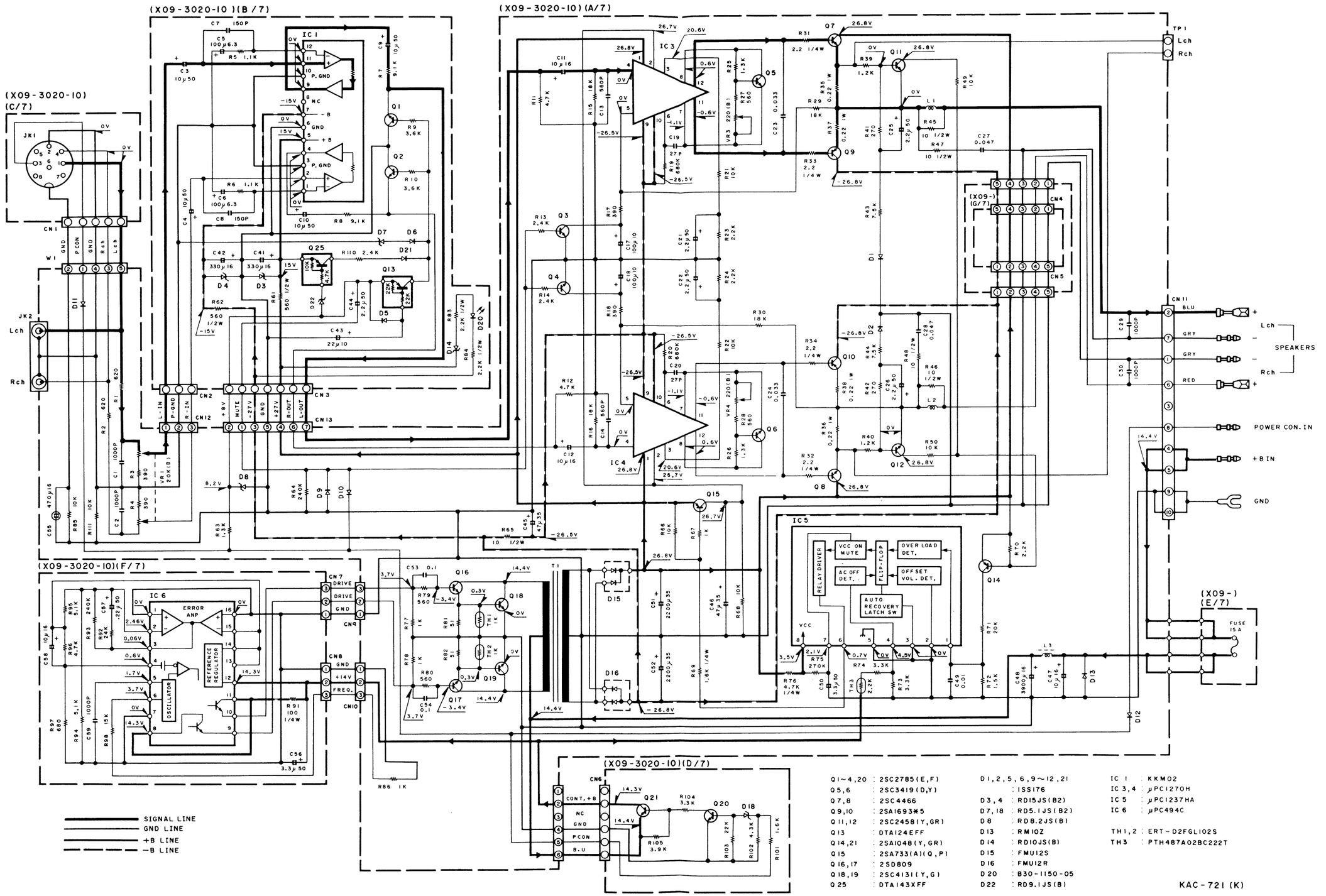


Ref.	IC																					1	3	4	5	6
No.	Q	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	25					
Address		6G	6G	3I	3I	2J	4J	2J	4J	3J	3J	4H	4I	6H	4H	4G	3G	4G	3F	3F	6H	6H	5H	6H	3I	4I	4G	6I

PC BOARD (Foil Side View)



Ref.	IC																					1	3	4	5	6
No.	Q	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	25					
Address		6 G	6 G	3 I	3 I	2 J	4 J	2 J	4 J	3 J	3 J	4 H	4 I	6 H	4 H	4 G	3 G	4 G	3 F	3 F	6 H	6 H	5 H	6 H	3 I	4 I	4 G	6 I



Q1~4,20	: 2SC2785(E,F)	D1,2,5,6,9~12,21	: 1SS176	IC 1	: KKM02
Q5,6	: 2SC3419(D,Y)	D3,4	: RD15JS(B2)	IC 3,4	: μPC1270H
Q7,8	: 2SC4466	D7,18	: RD5.1JS(B2)	IC 5	: μPC1237HA
Q9,10	: 2SA1693*5	D8	: RD8.2JS(B)	IC 6	: μPC494C
Q11,12	: 2SC2458(Y,GR)	D13	: RM10Z		
Q13	: DTA124EFF	D14	: RD10JS(B)	TH1,2	: ERT-D2FGL102S
Q14,21	: 2SA1048(Y,GR)	D15	: FMU12S	TH3	: PTH487A02BC222T
Q15	: 2SA733(A)(Q,P)	D16	: FMU12R		
Q16,17	: 2SD809	D20	: B30-1150-05		
Q18,19	: 2SC4131(Y,G)	D22	: RD9.1JS(B)		
Q25	: DTA143XFF				

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2SA733(A) DTA124EFF DTA143XFF 2SC2785 2SA1048 2SC2458 2SC3419 2SD809 2SC4131 UPC494C UPC1237HA UPC1270H

DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

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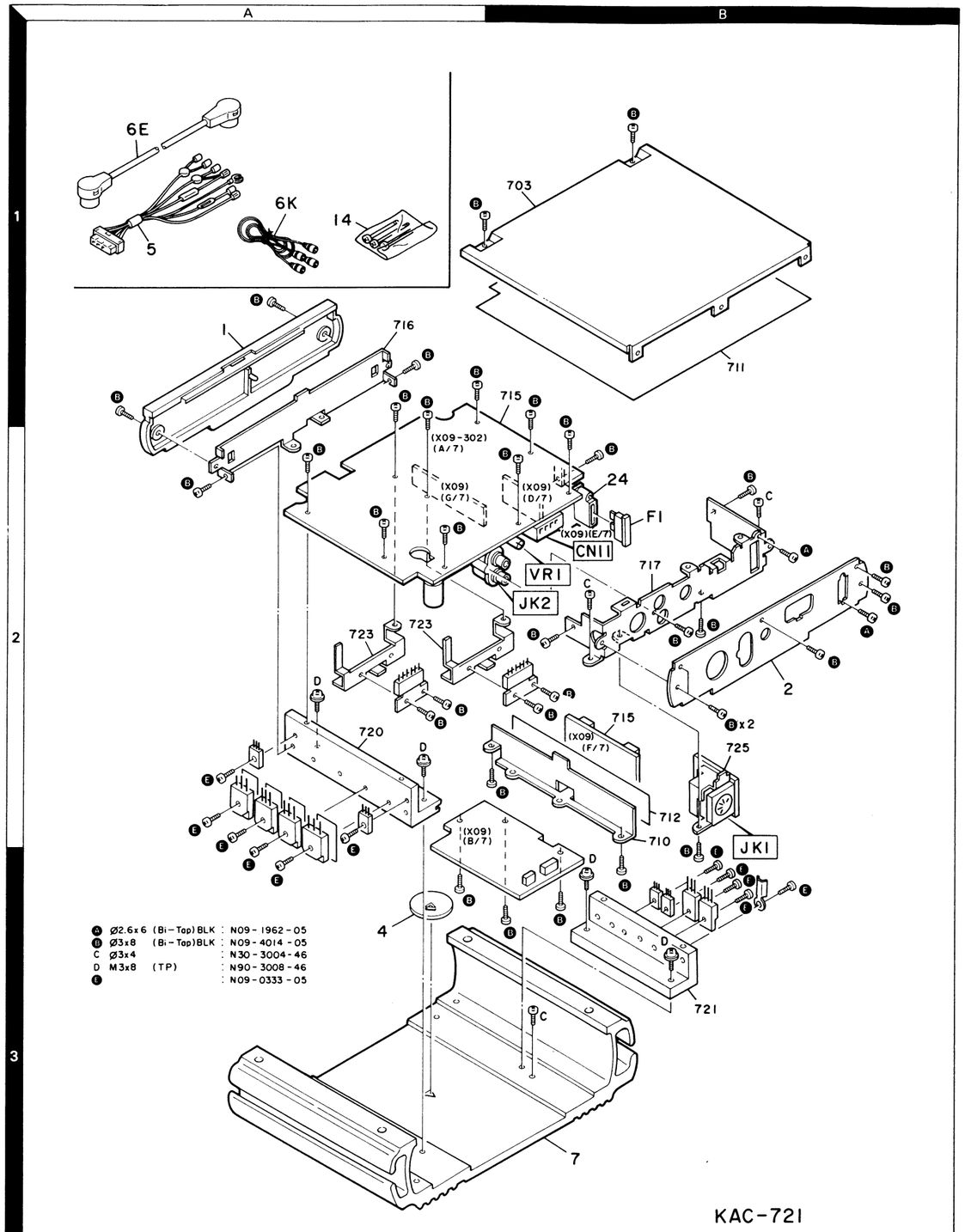
EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
			KAC-721			
1	1A	*	A20-7528-03	PANEL		
2	2B	*	A23-5003-03	REAR PANEL		
4	3A	*	B19-0818-04	LIGHTING BOARD		
-			B44-2163-04	UPC CODE LABEL		
-			B44-2165-04	UPC CODE LABEL		
-			B46-0100-10	WARRANTY CARD		
-		*	B50-7906-00	INSTRUCTION MANUAL	K	
-		*	B50-7908-00	INSTRUCTION MANUAL	E	
-		*	B50-7909-00	INSTRUCTION MANUAL	E	
-			B58-0803-13	CAUTION CARD (210X148,DBP)	E	
5	1A	*	E30-3573-05	DC CORD	K	
5	1A	*	E30-3575-05	DC CORD	E	
6E	1A	*	E30-3586-05	CORD WITH DIN CONNECTOR	E	
6K	1A	*	E30-3585-05	AUDIO CORD	K	
7	3A,3B	*	F01-1340-02	HEAT SINK	K	
7	3A,3B	*	F01-1311-02	HEAT SINK	E	
F1	2B		F05-1537-05	FUSE (15A)		
-		*	H01-9060-04	ITEM CARTON CASE	K	
-		*	H01-9067-04	ITEM CARTON CASE	E	
-		*	H03-3072-04	OUTER CARTON CASE	K	
-		*	H03-3080-04	OUTER CARTON CASE	E	
-		*	H10-4312-03	POLYSTYRENE FOAMED FIXTURE	K	
-		*	H10-4313-03	POLYSTYRENE FOAMED FIXTURE	E	
-			H25-0336-04	PROTECTION BAG (170X250X0.03)		
-			H25-0338-04	PROTECTION BAG (250X350X0.03)		
14	1A	*	N99-1528-05	SCREW SET		
A	2B		N09-1962-05	TAPTITE SCREW (M2.6X6)		
B	2A,2B	*	N09-4014-05	TAPTITE SCREW (3X8)		
C	3A,3B		N30-3004-46	PAN HEAD MACHINE SCREW		
D	2A,3B		N90-3008-46	TP HEAD MACHINE SCREW		
			AUDIO UNIT (X09-3020-10: K, 0-11: E)			
D20			B30-1150-05	LED(BR4371F-B6)		
C1 ,2			CK45FB1H102K	CERAMIC 1000PF K		
C3 ,4			CE04DW1H100M	ELECTRO 10UF 50WV		
C5 ,6		*	C90-2512-05	ELECTRO 100UF 6.3WV		
C7 ,8		*	CK45FB1H151K	CERAMIC 150PF K		
C9 ,10			CE04DW1H100M	ELECTRO 10UF 50WV		
C11 ,12			CE04DW1C100M	ELECTRO 10UF 16WV		
C13 ,14			CK45FB1H561K	CERAMIC 560PF K		
C17 ,18			C90-1640-05	ELECTRO 100UF 10WV		
C19 ,20			CC45FSL1H270J	CERAMIC 27PF J		
C21 ,22			CE04DW1H2R2M	ELECTRO 2.2UF 50WV		
C23 ,24			CF92FV1H333J	MF 0.033UF J		
C25 ,26			CE04DW1H2R2M	ELECTRO 2.2UF 50WV		
C27 ,28			CF92FV1H473J	MF 0.047UF J		
C29 ,30			CF92FV1H102J	MF 1000PF J		
C41 ,42		*	C90-2513-05	ELECTRO 330UF 16WV		
C43		*	C90-2511-05	ELECTRO 22UF 10WV		
C44			CE04DW1H2R2M	ELECTRO 2.2UF 50WV		
C45 ,46			CE04DW1V470M	ELECTRO 47UF 35WV		
C47			CE04DW1C100M	ELECTRO 10UF 16WV		
C48		*	C90-2509-05	ELECTRO 3900UF 16WV		

E: Scandinavia & Europe **K**: USA **P**: Canada
U: PX(Far East, Hawaii) **T**: England **M**: Other Areas
UE: AAFES(Europe) **X**: Australia

⚠ indicates safety critical components.

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C49			CF92FV1H103J	MF 0.010UF J		
C50			CE04DW1H3R3M	ELECTRO 3.3UF 50WV		
C51 ,52		*	C90-2508-05	ELECTRO 2200UF 35WV		
C53 ,54			CF92FV1H104J	MF 0.10UF J		
C55		*	C90-2510-05	ELECTRO 470UF 16WV		
C56			CE04DW1H3R3M	ELECTRO 3.3UF 50WV		
C57			CE04DW1HR22M	ELECTRO 0.22UF 50WV		
C58			CE04DW1C100M	ELECTRO 10UF 16WV		
C59			CF92FV1H102J	MF 1000PF J		
CN11			E08-1005-05	RECTANGULAR RECEPTACLE		
JK1	2B		E06-0816-05	REC/PLAY JACK		
JK2	2A	*	E13-0256-05	PHONO JACK (2P)		
24	2B		J13-0071-05	FUSE HOLDER		
LH1			J19-2826-05	HOLDER		
L1 ,2			L39-0085-05	PHASE-COMPENSATION COIL		
L3		*	L33-0902-05	LINE FILTER COIL		
T1		*	L19-0501-05	TRANSFORMER FOR CONVERTER		
B	2A,2B	*	N09-4014-05	TAPTITE SCREW (3X8,)		
E	2A,3B		N09-0333-05	TAPPING SCREW (3X12,)		
R35 -38		*	RS14KB3AR22J	FL-PROOF RS 0.22 J 1W		
R45 -48			RD14DB2H100J	SMALL-RD 10 J 1/2W		
R61 ,62			RD14DB2H561J	SMALL-RD 560 J 1/2W		
R65			RD14DB2H100J	SMALL-RD 10 J 1/2W		
R83 ,84		*	RD14DB2H222J	SMALL-RD 2.2K J 1/2W		
VR1	2B		R10-3030-05	POTENTIOMETER		
VR3 ,4			R12-0092-05	TRIMMING POT.(220)		
D1 ,2			1SS176	DIODE		
D3 ,4			RD15JS(B)	ZENER DIODE		
D5 ,6			1SS176	DIODE		
D7			RD5.1JS(B2)	ZENER DIODE		
D8			RD8.2JS(B)	ZENER DIODE		
D9 -12			1SS176	DIODE		
D13			RM10Z	DIODE	E	
D14			RD10JS(B)	ZENER DIODE		
D15			FMU12S	DIODE		
D16			FMU12R	DIODE		
D18			RD5.1JS(B2)	ZENER DIODE		
D21			1SS176	DIODE		
D22			RD9.1JS(B)	ZENER DIODE		
IC1		*	KKN02	IC		
IC3 ,4			UPC1270H	IC(POWER AMP)		
IC5			UPC1237HA	IC(POWER AMP)		
IC6			UPC494C	IC(SWITCHING REGULATOR)		
Q1 -4			2SC2785(F,E)	TRANSISTOR		
Q5 ,6			2SC3419	TRANSISTOR		
Q7 ,8			2SC4466*5	TRANSISTOR		
Q9 ,10			2SA1693*5	TRANSISTOR		
Q11 ,12		*	2SC2458(Y,GR)	TRANSISTOR		
Q13			DTA124EFF	DIGITAL TRANSISTOR		
Q14		*	2SA1048(Y,GR)	TRANSISTOR		
Q15			2SA733(A)(Q,P)	TRANSISTOR		
Q16 ,17		*	2SD809(K,F)	TRANSISTOR		

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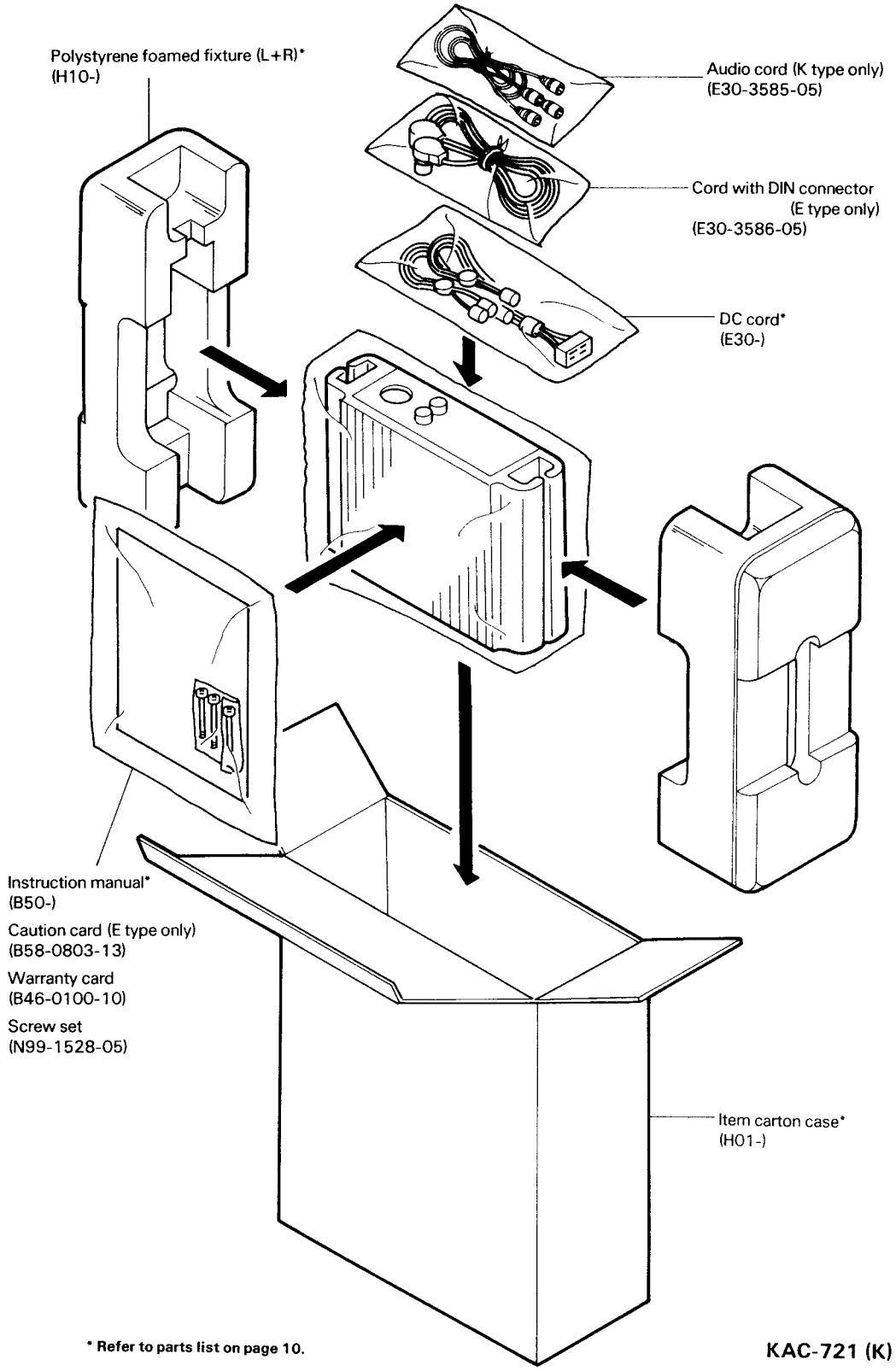
Q18 ,19			2SC4131	TRANSISTOR		
Q20			2SC2785(F,E)	TRANSISTOR		
Q21		*	2SA1048(Y,GR)	TRANSISTOR		
Q25			DTA143XFF	DIGITAL TRANSISTOR		
TH1 ,2		*	ERT-D2FGL102S	THERMISTOR		
TH3			PTH487A01BC222T	POSITIVE RESISTOR		

E: Scandinavia & Europe K: USA P: Canada W:Europe
U: PX(Far East, Hawaii) T: England M: Other Areas
UE: AAFES(Europe) X: Australia

⚠ indicates safety critical components.

PACKING



* Refer to parts list on page 10.

KAC-721 (K)

SPECIFICATIONS

Specifications subject to change without notice.

Audio section

Max Power Output (1 kHz, 4 Ω)	70 W + 70 W
Rated output power (less than 0.5% THD, 20 Hz - 20 kHz, 4 Ω)	37 W + 37 W
Frequency Response (−3 dB)	2 Hz - 70 kHz
Sensitivity (rated output) MAX.	0.1 V
MIN.	5.0 V
Signal to Noise Ratio	105 dB
Input Impedance	10 kΩ
Damping Factor (100 Hz)	more than 100

General

Operating Voltage	14.4 V (11 - 16 V allowable)
Current Consumption (MAX)	9.5 A
Dimensions (W × H × D)	220 × 45 × 150 mm
	(8-11/16 × 1-3/4 × 5-7/8 in.)
Weight	1.6 kg (3.5 lb)

Kenwood follows a policy of continuous advancements in development.
For this reason specifications may be changed without notice.

Kenwood poursuit une politique de progrès constants en ce qui concerne le développement.
Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

Kenwood strebt ständige Verbesserungen in der Entwicklung an.
Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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